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ORIGINAL

March 8, 2002

By Hand

William F. Caton, Acting Secretary
Federal Communications Commission
445 12th Street, N.W.,
Washington, DC 20554

Re: Ex Parte Communication in IB Docket No. 01-96

Dear Mr. Caton:

This letter is written on behalf of SkyBridge L.L.C. ("SkyBridge") in response to a written *ex parte* filed by Virtual Geosatellite, LLC ("Virtual Geo") on February 12, 2002 (the "Virtual Geo *Ex Parte*").[1]

In its *ex parte* presentation, Virtual Geo outlines a "new proposal" for sharing among non-geostationary satellite orbit ("NGSO") Fixed-Satellite Service ("FSS") systems. Virtual Geo characterizes its proposal as a blend of the Commission's "Option III" (avoidance of in-line events) and "Option IV" (use of homogeneous constellations).[2]

On inspection, however, the proposal appears to be nothing more than Option III, with the addition of a guarantee to Virtual Geo that its "Virgo" system (and

[1] Letter to William F. Caton from Stephen D. Baruch, IB Docket No. 01-96, February 12, 2002.

[2] Virtual Geo *Ex Parte*, Attachment at 4.

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any other "VGSO" system using the same patented orbit) would always be assigned the same half of each band during any in-line event with a satellite of any other NGSO FSS system. As discussed below, there is no rational reason for granting Virtual Geo's request for such a preference at the expense of other applicants.[3] Option III already fully accommodates VGSO systems, including the Virgo system.

Virtual Geo states that, under its proposal, *all systems would be "built for and may use all spectrum."*[4] Therefore, each system would have the ability, from a technical standpoint, to confine its transmissions to either half of any given band during an in-line event. Virtual Geo has provided no reason why its system is any different in this regard. There is, therefore, no technical reason to guarantee Virtual Geo (or any other system or class of systems) access to the same band during all in-line events.

Virtual Geo argues that "[t]he reversion to predetermined bands resolves the current difficulty with [Option III] for system architectures such as Virtual Geosatellite's that do not permit use of satellite diversity."[5] There is absolutely no technical or factual basis for this statement.

First, as SkyBridge has demonstrated previously, it appears that the Virgo system does have some such diversity capability.[6] Second, even assuming *arguendo* that

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[3] It is obvious that such a preference could not be granted to all applicants. If each system is to have access to at least half the band during in-line events with another system, it is necessary that each system sometimes revert to the upper half and sometimes to the lower half. If all systems were granted their preference, two "upper half" or two "lower half" systems would not be able to split the entire band.

Moreoever, as SkyBridge has explained before, the spectrum allocated to Ku-band NGSO FSS systems is not fungible. All portions of the available spectrum are already used for different services, and constraints on NGSO FSS operations in each of these bands differ significantly. Any sharing solution should provide each NGSO FSS system equitable access to bands with reasonably the same sharing conditions.

Nonetheless, as SkyBridge has explained, any two licensees may agree between themselves how to split the bands during any in-line events involving their satellites. In this way, preferences may be taken into account. However, Virtual Geo provides no reason why the Commission should dictate in advance that one type of system would *always* get its preference.

[4] Virtual Geo *Ex Parte*, Attachment at 4 (emphasis added).

[5] Virtual Geo *Ex Parte* at 1.

[6] Reply Comments of SkyBridge, IB Docket No. 01-96, August 6, 2001, at 8. A simple examination of the Virgo system shows that Virtual Geo will always have two satellites visible to any given earth station, and could therefore employ satellite diversity. Virtual Geo's claimed lack of satellite diversity capability results solely from its self-imposed limits on its earth station "look angles." As previously demonstrated by SkyBridge and others (e.g., Denali, which also proposes a HEO system), earth station operation at lower elevation angles (which, in any case, appears necessary for Virgo service to

the Virgo system cannot employ satellite diversity, the new Virtual Geo proposal does nothing to address this deficiency. To permit sharing of the available spectrum to the maximum extent possible, Virtual Geo, like any other operator, will need to revert to half of the available bands during in-line events with other NGSO FSS systems (or employ satellite diversity) to avoid in-line transmissions. Guaranteeing that the Virgo system may always revert to the same half of each band does not increase its available bandwidth, and thus does not resolves any "difficulty" Virtual Geo may perceive with respect to Option III, or its ability to employ satellite diversity to avoid band-splitting.[7]

Put simply, Virtual Geo's request for a spectrum preference does nothing to mitigate or simplify its sharing burden in any way that is unique to its system. The benefits of such a preference would apply equally to any other NGSO system. Presumably it might simplify each operator's planning to be guaranteed that, in an in-line event, it could always revert to the same half of the band. But there are not enough halves for each system to be assigned one. Since Virtual Geo indicates that, under its proposal, all systems would be built to employ all the available frequencies, the Virgo system will have precisely the same ability, as every other operator, to employ frequency diversity. Particularly given Virtual Geo's arbitrary refusal to employ satellite diversity, it should not be rewarded by granting it a preference over all other NGSO FSS systems.

Virtual Geo also seems to argue that its proposal "[f]acilitates further NGSO licensing into VGSO slots."[8] Putting aside the fact that there are no other applications before the Commission for systems employing "VGSO" orbits, it is entirely unclear how the preference Virtual Geo seeks would facilitate sharing between any kind of NGSO FSS system, VGSO or otherwise.

Under Option III, the band-split between two satellites during a given in-line event affects only the two systems to which those satellites belong. Under no

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equatorial regions) provides Virtual Geo with satellite diversity capability, with no apparent adverse impact on its system.

[7] Indeed, it is very difficult to understand Virtual Geo's objection to Option III. Under Virtual Geo's old proposal, which involved band segmentation between VGSO and non-VGSO systems, the Virgo system would use only half of the band even during normal operation. In that case, its capacity would be unaffected by adherence to Option III (instead of band segmentation), even if it did not employ satellite diversity. Reply Comments of SkyBridge, IB Docket No. 01-96, August 6, 2001, at 6-7. Under its new proposal, in the absence of satellite diversity, it will be constrained to half the band only during in-line events with other NGSO FSS systems. This result is far better for the Virgo system than that under Virtual Geo's old proposal, even if Virgo does not have the added benefit of always reverting to the same half of the band during in-line events. In sum, the flexibility provided by Option III, standing alone, is entirely sufficient to permit operation of the Virgo system.

[8] Virtual Geo *Ex Parte*, Attachment at 8.

scenario is a spectrum preference required or even desirable to accommodate VGSO systems:

- For in-line events between two non-VGSO NGSO FSS satellites, the two in-line satellites would either split the available bands or the systems would employ satellite diversity to avoid in-line transmissions. No VGSO systems are affected by the in-line event, or the measures taken by the other systems to mitigate interference during it.

- For in-line events between a VGSO satellite and a satellite of any other type of NGSO FSS system, the Virtual Geo proposal would augment Option III with a guarantee that the VGSO system could always revert to the same half of each band. However, as discussed above, there is no technical reason why a VGSO system could not revert to either half of the band. Therefore, even without the Virtual Geo proposal, the VGSO can share with other types of NGSO FSS systems on an equitable basis.

  Furthermore, the specific band to which a particular VGSO system may revert in a given scenario would not affect sharing with other VGSO systems, if any. As Virtual Geo argues, VGSO systems would coordinate their orbits to avoid in-line events, [9] and can share with each other regardless of the frequencies used by each VGSO system. There is, therefore, no reason why all VGSO systems would need to revert to the same band, as Virtual Geo proposes.

- Finally, with respect to in-line events between two VGSO systems, as noted above, Virtual Geo argues that there would not be any, due to the use of coordinated orbits. If this is the case, it cannot possibly matter to which half of the band is employed by each system. Even if the VGSO systems did not coordinate their orbits (and there is no reason under Option III why they must), the situation would be exactly the same as above for an in-line event between a VGSO satellite and a satellite of any other type of NGSO FSS system.

Therefore, in no scenario is sharing between VGSO systems (assuming, *arguendo*, that more than one exists) facilitated by awarding such systems a spectrum preference during in-line events with other systems.

In sum, the Virtual Geo proposal does nothing to facilitate NGSO/NGSO sharing, no matter which NGSO FSS satellites are involved in an in-line event, and whether or not more than one Virgo-type system is launched. Option III is all that is needed to equitably address any interference configuration between any two NGSO FSS systems, regardless of their architecture. Virtual Geo's new proposal is nothing more than another of its self-serving attempts to obtain an unjustified preference for its own

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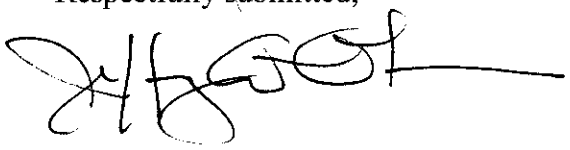
[9] Virtual Geo *Ex Parte,* Attachment at 4.

system, and to again attempt to promote the myth, long since dispelled,[10] that Virgo-type systems are somehow deserving of special regulatory treatment.

If there are any questions regarding this matter, please contact the undersigned.

Respectfully submitted,



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[10] See, e.g., SkyBridge Comments, IB Docket No. 01-96, July 6, 2001, at 13-16; SkyBridge Reply Comments, IB Docket No. 01-96, August 6, 2001, at 18-20.